

ABSTRACT OF THE DISCLOSURE

A process for liquefying natural gas in conjunction with producing a liquid stream containing predominantly hydrocarbons heavier than methane is disclosed. In the process, the natural gas stream to be liquefied is partially cooled and divided into first and second streams. The first stream is further cooled to condense substantially all of it, expanded to an intermediate pressure, and then supplied to a distillation column at a first mid-column feed position. The second stream is also expanded to intermediate pressure and is then supplied to the column at a second lower mid-column feed position. A distillation stream is withdrawn from the column below the feed point of the second stream and is cooled to condense at least a part of it, forming a reflux stream. At least a portion of the reflux stream is directed to the distillation column as its top feed. The bottom product from this distillation column preferentially contains the majority of any hydrocarbons heavier than methane that would otherwise reduce the purity of the liquefied natural gas. The residual gas stream from the distillation column is compressed to a higher intermediate pressure, cooled under pressure to condense it, and then expanded to low pressure to form the liquefied natural gas stream.